

Libby Mine Site
Possible Initial Work Tasks

Goal: Develop understanding of the site features and environmental conditions to allow scoping of a remedial investigation/initial settlement negotiations.

Task 1: Assemble Information on Current Mine Site Features and Mining Operations/Waste Management

- Obtain current and historical aerial photographs
- Obtain site maps, including features, structures, drainages and property ownership
- Gather available documentation on historical mine operations, with a focus on waste disposal practices
- Interview employees that worked at the mine regarding waste management with a focus on the identification of material types and any specific issues that might need to be addressed

At the end of this task, we would have a basic understanding of the site – the types of waste materials that are present, where and when and how they were generated.

Task 2: Compile Current Data and Assemble Relevant Information Into GIS

- Collect all available data for the mine site and perform a data review to identify applicability to support development of a preliminary site conceptual model.
- Assess the data usability with respect to the overall project goal.
- Assemble pertinent data (likely a subset of the overall dataset in this initial phase) into a GIS that links site features with available data.

Task 3: Develop a Preliminary Conceptual Site Model

- Identify principal potential exposure scenarios and transport pathways that are known to be or have the potential to be of concern. Preliminary list:
 - Human direct contact with mine materials containing asbestos
 - Air release of asbestos from mine materials and deposition in off-property areas [possibly]
 - Release of other contaminants (i.e., metals) from waste materials to infiltrating water – transport with water to seeps, groundwater and creeks (possible via groundwater transport to springs) [possibly]
 - Mine materials in drainageways and creeks (asbestos an issue? metals?)
 - Off-property asbestos on vegetation and in soils
- Identify major data gaps.

Task 4: Develop A Sampling and Analysis Plan to Generate Data to Provide Information on “Big Picture” Issues

- Based on the information generated from the above, identify types of samples that could provide a screening level assessment of potential key issues (i.e. to fill major conceptual data gaps). Based on knowledge of other mining sites and preliminary inspection of Libby data, likely types of sampling are:
 - Sampling of seeps emanating from mine waste piles, tailings ponds and other major features and analysis for metals/inorganics. (It appears that all mining byproducts and waste materials contain asbestos [will need to verify through document review]. However, it is not known whether these materials are sources of other contaminants [metals]. Waste rock piles at mine sites are subject to weathering [air and water] that can release contaminants. A simple way to assess this is to collect water that emanates as seeps from the base of waste piles.)
 - Air monitoring to evaluate release of asbestos from mine waste materials (use meteorological data for wind direction, precipitation, etc. to identify season when air release is more likely [dry conditions/higher winds]. Program could include perimeter sampling on a daily basis [four directions] with a subset of the samples analyzed depending on wind speed/direction data [other samples could be archived]).
 - Sediment and water sampling for creeks (Rainy Creek, possibly others) and analysis for asbestos, metals, inorganics.

Other data may be required, depending on specific findings from earlier tasks.

Task 5: Site Visit/Screening Level Sampling

- Visit site to inspect mine features/verify findings above.
- Perform a survey of seeps emanating from disposal areas/collect samples.
- Inspect creeks and drainages for presence of mine waste/ collect samples.
- Identify appropriate areas for longer-term air monitoring.
- Identify additional areas of concern/data gaps that might need addressing for the preliminary site conceptual model.

Task 6: Sample Analysis/Implement Air Monitoring Program

- Analyze water/sediment samples collected under task 5.
- Implement air monitoring program (longer term – at least 3 months)

Task 7: Report

- Prepare a summary report documenting the principal findings, including sampling results. The report will provide the basic site conceptual model and a description of key additional data needs for remedial investigation/settlement negotiations.